

REMARKS

In view of the above amendment, Applicants believes the pending application is in condition for allowance.

Claims 1-7, 9-14, and 16-21 are now present in this application. Claims 1, 13, and 21 are independent.

Amendments have been made to the specification, claims 8 and 15 have been canceled, claim 21 has been added, and claims 1, 13, and 16 have been amended.

Reconsideration of this application, as amended, is respectfully requested.

Priority Under 35 U.S.C. § 119

Applicants thank the Examiner for acknowledging Applicants' claim for foreign priority under 35 U.S.C. § 119, and receipt of the certified priority document.

Drawings

The Office Action indicates that the drawings are accepted by the Examiner. No further action is necessary at this time.

Specification Objection

The Examiner has objected to the specification because of several informalities. In order to overcome this objection, Applicants have amended the specification in order to correct the deficiencies pointed out by the Examiner.

Reconsideration and withdrawal of this objection are respectfully requested.

Rejection Under 35 U.S.C. § 112, 1st Paragraph

Claims 1-20 stand rejected under 35 U.S.C. § 112, 1st Paragraph. This rejection is respectfully traversed.

Regarding the equation on page 3, lines 17, the equation has been amended to multiply the right side of the equation by $(1/\alpha)$ to make the units be consistent.

Regarding the passages at page 8, lines 3 and 4, and at page 9, lines 11 and 12, Applicants submit that one of ordinary skill in the art would understand that the velocity is varied by varying the voltage applied to the compressor, and the stroke is varied corresponding to the varied velocity. *See* Fig. 4, and the equations at page 3, lines 17 and 18 of the application.

Regarding the passage at page 8, lines 16 and 17, Applicants submit that one of ordinary skill in the art would have understood that sensorless method is the method which calculates (or determines) the stroke based on the detected voltage and the detected current as it was previously described at page 3 of the present application. The specification has been amended accordingly.

Regarding the passage at page 8, lines 20-22, Applicants submit that one of ordinary skill in the art would understand the period to be the elapsed time when the piston reciprocates between the top point and the bottom point of the compressor. The specification has been amended accordingly.

Regarding the passage at page 11, lines 5-13, Applicants submit that these are terms of art that would be well known to one of ordinary skill in the art. Specifically, a stroke peak value means the maximum value of the varied stroke for one period, a current peak value means the maximum value of the varied current for one period, a stroke effective value means the converged DC value of the varied stroke, with which the compressor can do the same work, and a current effective value means the converged DC value of the varied current, with which the compressor can do the same work.

Applicants respectfully submit that the present invention was fully enabled and understandable by one of ordinary skill in the art.

Applicants respectfully request that this rejection be withdrawn.

Rejection Under 35 U.S.C. § 112, 2nd Paragraph

Claims 1-20 stand rejected under 35 U.S.C. § 112, 2nd Paragraph. This rejection is respectfully traversed.

The Examiner alleges that the term “current operation frequency” is indefinite because “current” can have either a temporal or an electrical meaning. Applicants respectfully submit that one of ordinary skill in the art would understand “current operation frequency” to have the

temporal context in that the claims call for a comparison between the current or present operation frequency and a determined operation frequency. However, to address the Examiner's concern, the specification has been amended to indicate the temporal meaning of "current operation frequency."

In addition, the Examiner has objected to the phrase "according to a load state of the compressor" because it is unclear how the current and stroke are related to the load state of the compressor. Applicants have amended this phrase to recite "corresponding to a load state of the compressor" as suggested by the Examiner.

Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Rejections under 35 U.S.C. §103

Claims 1-7, 9-11, 13, 14, 17 and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,851,934 to Yoo et al. in view of U.S. Patent No. 6,851,934 to Yoo et al. This rejection is respectfully traversed.

A complete discussion of the Examiner's rejection is set forth in the Office Action, and is not being repeated here.

With regard to the rejection of claims 1-7 and 9-12, while not conceding the appropriateness of the Examiner's rejection, but merely to advance prosecution of the instant application, Applicants respectfully submit that independent claim 1 has been amended to include the limitations of claim 8, which was not rejected over prior art, thereby automatically placing independent claim 1 into condition for allowance, along with dependent claims 2-7 and 9-12.

With regard to the rejection of claims 13, 14, 17, and 18, while not conceding the appropriateness of the Examiner's rejection, but merely to advance prosecution of the instant application, Applicants respectfully submit that independent claim 13 has been amended to include the limitations of claim 15, which was not rejected over prior art, thereby automatically placing independent claim 13 into condition for allowance, along with dependent claims 14 and 16-20.

Claim 21

Independent claim 21 recites exactly the subject matter of original independent claim 1. Applicants submit that the rejection of original claim 1 was improper because U.S. Patent No. 6,851,934 to Yoo et al. in view of U.S. Patent No. 6,851,934 to Yoo et al. do not qualify as prior art. These two patents are available as prior art only under 35 U.S.C. § 102(e), but they are not available in a 35 U.S.C. § 103(a) rejection because the subject matter of the patents and the claimed invention were, at the time the claimed invention was made, owned by the same person or subject to an obligation of assignment to the same person. 35 U.S.C. § 103(c)(1). Therefore, the rejection of original claim 1 was improper and claim 21 is allowable.

However, if the Examiner determines that the application is in condition for allowance except for the existence of independent claim 21, the Examiner is invited to contact the undersigned regarding canceling this claim.

Additional Cited References

Since the remaining references cited by the Examiner have not been utilized to reject the claims, but have merely been cited to show the state of the art, no comment need be made with respect thereto.

Office Action

The Office Action contains numerous characterizations of the invention, the claims, and the related art, with which Applicants do not necessarily agree. Unless expressly noted otherwise, Applicants decline to subscribe to any statement or characterization in the Office Action.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response

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has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Chad D. Wells, Registration No. 50,875, at (703) 205-8000, in the Washington, D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By 

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